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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,814	10/24/2000	Stephen P. Turner	H0001468	4269

7590 01/21/2003

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EXAMINER
MCDONALD, RODNEY GLENN

ART UNIT	PAPER NUMBER
1753	8

DATE MAILED: 01/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/695,814	Turner et al.
Examiner	**Art Unit**
Rodney McDonald	1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) [X] Responsive to communication(s) filed on *Dec 16, 2002*.

2a) [ ] This action is **FINAL**. 2b) [X] This action is non-final.

3) [ ] Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) [X] Claim(s) *85-118* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) [ ] Claim(s) _____ is/are allowed.

6) [X] Claim(s) *85-118* is/are rejected.

7) [ ] Claim(s) _____ is/are objected to.

8) [ ] Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) [ ] The specification is objected to by the Examiner.

10) [ ] The drawing(s) filed on _____ is/are a) [ ] accepted or b) [ ] objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) [ ] The proposed drawing correction filed on _____ is: a) [ ] approved b) [ ] disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) [ ] The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) [ ] Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) [ ] All b) [ ] Some* c) [ ] None of:

1. [ ] Certified copies of the priority documents have been received.
2. [ ] Certified copies of the priority documents have been received in Application No. _____.
3. [ ] Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) [ ] Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) [ ] The translation of the foreign language provisional application has been received.

15) [ ] Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) [X] Notice of References Cited (PTO-892)
2) [ ] Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) [X] Information Disclosure Statement(s) (PTO-1449) Paper No(s). *2,6,7*
4) [ ] Interview Summary (PTO-413) Paper No(s). _____
5) [ ] Notice of Informal Patent Application (PTO-152)
6) [ ] Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 85-103 are rejected under 35 U.S.C. 102(b) as being anticipated by Hartig et al. (U.S. Pat. 5,403,458).

Hartig et al. teach ***a cathode target comprising a coating component*** which by itself or its reactive product is substantially electrically nonconductive ***and a dopant component*** which by itself or its reactive product is substantially electrically conductive. (Column 3 lines 34-38) The cathode targets of their invention preferably include minor amounts by weight of the dopant component (e.g. less than about 50% by weight of the dopant component). ***Preferably the target includes from about 0.1 % by weight to about 20 % by weight of this dopant element.*** (Column 3 lines 45-50)

The ***coating component*** can be selected from the group consisting of silicon, aluminum, boron, bismuth, germanium, vanadium, tin, zinc, titanium, ***zirconium***, chromium and tungsten. (Column 12 lines 19-23)

The ***dopant component*** can be selected from the group consisting of ***nickel***, palladium and mixtures thereof or selected from the group consisting of chromium, hafnium, ***titanium***, zirconium and mixtures thereof. (Column 12 lines 41-44)

3. Claims 104-112 and 114-118 are rejected under 35 U.S.C. 102(b) as being anticipated by Kodera et al. (Japan 5-255843).

Kodera et al. teach at least one kind of high purity grain growth inhibiting element such as Si, ***B*** or Ge is added to high purity ***Ti*** as the base of a target by a very small amount of 100-2,000 ppm by weight. The resulting target is grain-refined, particles scattered and deposited during sputtering are reduced and uniformity in film thickness is enhanced. The titanium is present at 99.99% in the target. (See Abstract; Translation)

4. Claims 85-87 and 91-92 are rejected under 35 U.S.C. 102(b) as being anticipated by Makino et al. (U.S. Pat. 5,209,835).

Makino et al. teach a sputtering substance (i.e. target) which contains at least one member selected from the group consisting of Zr, ***Ti***, Hf, Sn, Ta and In and at least one member selected from the group consisting of ***B*** and Si. (Column 2 lines 10-20)

The composition of the target comprises 90 to 30 atomic % of an element such as Zr and from 9 to 70 atomic % B. (Column 4 lines 65-68)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 85-103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartig et al. (U.S. Pat. 5,403,458).

Hartig et al. is discussed above and all is as applies above. (See Hartig et al. discussed above)

The differences between Hartig et al. and the present claims is the specifics of the ranges.

As to the ranges within the range, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the portion of the prior art's range which is in the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results, see In re Aller, et al., 105 U.S.P.Q. 233.

As to the overlapping ranges, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the

overlapping portion of the range disclosed by the prior art because overlapping ranges have held to be a prima facie case of obviousness, see In re Malagari, 182 U.S.P.Q. 549.

The motivation for selecting a specific composition of the target is that it allows for eliminating the need for anode reconditioning in a sputter chamber. (See Abstract)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected a specific composition of target as taught by Hartig et al. because it allows for eliminating the need for anode reconditioning in a sputter chamber.

7. Claims 104-112 and 114-118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodera et al. (Japan 05-255843).

Kodera et al. is discussed above all is as applied above. (See Kodera et al. discussed above)

The differences between Kodera et al. and the present claims is the specifics of the range.

As to the ranges within the range, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the portion of the prior art's range which is in the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results, see In re Aller, et al., 105 U.S.P.Q. 233.

As to the overlapping ranges, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the prior art because overlapping ranges have held to be a prima facie case of obviousness, see In re Malagari, 182 U.S.P.Q. 549.

The motivation for selecting a specific composition is that it allows for production of a uniform film. (See Abstract)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a target composition as taught by Kodera et al. because it allows for the production of a uniform film.

8. Claims 104 and 113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. (U.S. Pat. 5,209,835).

Makino et al. teach a sputtering substance (i.e. target) which contains at least one member selected from the group consisting of Zr, ***Ti***, Hf, Sn, Ta and In and at least one member selected from the group consisting of ***B*** and Si. (Column 2 lines 10-20)

The composition of the target comprises 90 to 30 atomic % of an element such as Zr and from 9 to 70 atomic % B. (Column 4 lines 65-68)

The differences between Makino et al. and the present claims is the range of Ti selected.

Since Makino et al. equate Zr and Ti and disclose utilizing 90 to 30 atomic % Zr, it would be obvious to select Ti in the same range as the zirconium. (Column 2 lines 10-20; Column 4 lines 65-68)

The motivation for selecting the amount of titanium in the target is that it allows for production of a protective film. (Column 2 line 2)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a titanium and boron target with less than 98% titanium as taught by Makino et al. because it allows for the production of a protective film.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney McDonald whose telephone number is 703-308-3807. The examiner can normally be reached on M-Th from 8 to 5:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen, can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

RODNEY G. MCDONALD
PRIMARY EXAMINER

RM

January 14, 2003